



PATENT  
Attorney Docket No. A-66566-7  
Attorney File No.: 463037-00323

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

*In re* application of

O'CONNOR *et al.*

Serial No. 10/823,503

Filed: April 12, 2004

For: *Binding Acceleration Techniques  
For the Detection of Analytes*

Examiner: NOGUEROLA, Alexander S.

Art Unit: 1753

CERTIFICATE OF MAILING

I hereby certify that this correspondence, including listed enclosures, are being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:

Date: March 15, 2006

Signature   
Brent Yonahara

**INFORMATION DISCLOSURE STATEMENT  
AND  
STATEMENT OF RELATEDNESS**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In satisfaction of the duty of disclosure under 37 C.F.R. § 1.56, and in accordance with the provisions of 37 C.F.R. §§ 1.97 and 1.98, Applicants wish to draw the attention of the U.S. Patent and Trademark Office to the references cited on the accompanying form PTO/SB/8A. In accordance with 1287 Off. Gaz. Pat. Office 163, 10/19/2004, no copies of U.S. patents and U.S. published applications are enclosed. Copies of foreign patents and non-patent literature, unless indicated otherwise below, are enclosed.

Further, this application is a continuation of the following related U.S. Application – Serial No.09/520,477, filed March 8, 2000 (now U.S. Patent No. 6,761,816, issued July 13, 2004), upon which the instant application relies for its priority

date. Applicants wish to draw the attention of the U.S. Patent and Trademark Office to the references cited on the accompanying substitute for form PTO-1449 marked with the symbol (†). Since these references were previously disclosed by either Applicants or the Examiner in the above-mentioned application, in accordance with 37 C.F.R. § 1.98(d), no copies of these references are enclosed.

Further, in satisfaction of the duty of disclosure under 37 C.F.R. § 1.56, and as required by M.P.E.P. § 2001.06(b), Applicant notes that the present application is related to the following pending patent applications:

1. U.S.S.N. 0712,792, filed November 13, 2000; U.S.S.N. 11/083,780, filed March 16, 2005;
2. U.S.S.N. 08/873,978, filed June 12, 1997; U.S.S.N. 09/557,577, filed April 12, 2000; U.S.S.N. 11/295,993, filed December 6, 2005; U.S.S.N. 11/343,462, filed January 30, 2006;
3. U.S.S.N. 08/873,597, filed June 12, 1997; U.S.S.N. 10/241,376, filed September 11, 2002;
4. U.S.S.N. 11/283,233, filed November 18, 2005;
5. U.S.S.N. 09/135,183, filed August 17, 1998;
6. U.S.S.N. 09/452,277, filed December 3, 1999; U.S.S.N. 11/208,384, filed August 19, 2005;
7. U.S.S.N. 10/016,416, filed December 10, 2001; and
8. U.S.S.N. 09/245,105, filed January 27, 1999.

Applicants additionally note that the referenced cited on the accompanying substitute for form PTO-1449 as A62, A68, A81, A92, A95, A98, A104, A106-A107, A112-A116, A120-A122, A124-A125, A127-A134, and A130-A164 are published or issued co-pending or related applications.

Nothing herein shall constitute an admission concerning the contents of any of the cited references, nor shall the inclusion of a reference herein be considered an admission that the reference constitutes prior art against the invention claimed in the above-identified application. Submission of the present document shall not be construed as an admission that a search has been made or that better art does not exist.

As far as is known to the undersigned, this Information Disclosure Statement is being filed within three months of the filing date of a national application, within three months of the date of entry of the national state in an international application, or before the mailing date of a first Office Action on the merits as set forth in 37 C.F.R. § 1.97(b), and therefore no fee is required.

While no further fee is believed to be due, if this belief is in error, the Commissioner is authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-2319 (Our Order No. 463037-00323; Our Docket No.: A-66566-7).

Serial No.: 10/823,503

Filed: April 12, 2004

Please direct further questions in connection with this Application to the undersigned at (415) 781-1989.

Respectfully submitted,

DORSEY & WHITNEY LLP

Dated: Mar. 15, 2006 By: J. P. Bernhardt  
**Customer No.: 32940** Jeffery P. Bernhardt, Reg. No. 54,997 for  
555 California Street, Suite 1000 Robin M. Silva, Reg. No. 38,304  
San Francisco, CA 94104-1513  
Telephone: (415) 781-1989  
Facsimile: (415) 398-3249

Attachments: Form SB/08/A-B, substitute for Form PTO-1449  
Return Postcard

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary) Sheet 1 of 21		Application Number	10/823,503
		Filing Date	April 12, 2004
		First Named Inventor	O'CONNOR, Stephen D.
		Art Unit	1753
		Examiner Name	NOGUEROLA, Alexander S.
		Attorney Docket Number	A-66566-7 (463037-00323)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1 †	4,704,193	11-17-1987	Bowers et al.	
	A2 †	4,707,352	11-17-1987	Stavrianopoulos	
	A3 †	4,707,440	11-17-1987	Stavrianopoulos	
	A4 †	4,711,955	12-08-1987	Ward, et al.	
	A5 †	4,755,458	07-05-1988	Rabbani, et al.	
	A6 †	4,787,963	11-29-1988	MacConnell	
	A7 †	4,840,890	06-20-1989	Hill et al.	
	A8 †	4,840,893	06-20-1989	Hill et al.	
	A9 †	4,849,513	07-18-1989	Smith, et al.	
	A10 †	4,868,103	09-19-1989	Stavrianopoulos, et al.	
	A11 †	4,894,325	01-16-1990	Englehardt, et al.	
	A12 †	4,908,319	03-13-1990	Smyczek at al.	
	A13 †	4,943,523	07-24-1990	Stavrianopoulos	
	A14 †	4,952,685	08-28-1990	Stavrianopoulos	
	A15 †	4,994,373	02-19-1991	Stavrianopoulos	
	A16 †	5,002,885	03-26-1991	Stavrianopoulos	
	A17 †	5,013,831	05-07-1991	Stavrianopoulos	
	A18 †	5,015,569	05-14-1991	Pontius	
	A19 †	5,064,618	11-12-1991	Baker et al.	
	A20 †	5,082,830	01-21-1992	Brakel, et al.	
	A21 †	5,089,112	02-18-1992	Skotheim et al.	
	A22 †	5,098,781	03-24-1992	Minnick et al.	
	A23 †	5,100,775	03-31-1992	Smyczek at al.	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	2	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A24 †	5,106,751	04-21-1992	Newman	
	A25 †	5,126,022	06-30-1992	Soane et al.	
	A26 †	5,126,034	06-30-1992	Carter et al.	
	A27 †	5,147,607	09-15-1992	Mochida	
	A28 †	5,156,810	06-15-1989	Ribi	
	A29 †	5,175,269	12-29-1092	Stavrianopoulos	
	A30 †	5,180,968	01-19-1993	Bruckenstein et al.	
	A31 †	5,194,133	03-16-1993	Clark et al.	
	A32 †	5,200,051	04-06-1993	Cozzette et al.	
	A33 †	5,241,060	08-31-1993	Englehardt, et al.	
	A34 †	5,242,828	09-07-1993	Bergstrom et al.	
	A35 †	5,278,043	01-11-1995	Bannwarth, et al.	
	A36 †	5,296,375	03-22-1994	Kricka et al.	
	A37 †	5,304,487	04-19-1994	Wilding et al.	
	A38 †	5,312,527	05-17-1994	Mikkelsen, et al.	
	A39 †	5,328,824	07-12-1994	Ward, et al.	
	A40 †	5,356,786	10-18-1994	Heller et al.	
	A41 †	5,391,272	02-21-1995	O'Daly et al.	
	A42 †	5,403,451	04-04-1995	Riviello et al.	
	A43 †	5,436,161	07-25-1995	Bergstrom et al.	
	A44 †	5,437,999	08-01-1995	Diebold et al.	
	A45 †	5,443,701	08-22-1995	Willner et al.	
	A46 †	5,449,767	09-12-1995	Ward, et al.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	3	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A47 †	5,472,881	12-05-1995	Beebe et al.	
	A48 †	5,476,928	12-19-1995	Ward et al.	
	A49 †	5,486,335	01-23-1996	Wilding et al.	
	A50 †	5,491,097	02-13-1996	Ribi et al.	
	A51 †	5,498,392	03-12-1996	Wilding et al.	
	A52 †	5,505,321	04-09-1996	Caron et al.	
	A53 †	5,532,128	07-02-1996	Eggers et al.	
	A54 †	5,552,270	09-03-1996	Khrapko et al.	
	A55 †	5,565,322	10-15-1996	Heller	
	A56 †	5,565,552	10-15-1996	Magda et al.	
	A57 †	5,571,568	11-05-1996	Ribi et al.	
	A58 †	5,573,906	11-12-1996	Bannwarth et al.	
	A59 †	5,582,984	12-10-1996	Bieniarz et al.	
	A60 †	5,585,069	12-17-1996	Zanzucchi et al.	
	A61 †	5,587,128	12-24-1996	Wilding et al.	
	A62 †	5,591,578	01-07-1997	Meade et al.	
	A63 †	5,593,838	01-14-1997	Zanzucchi et al.	
	A64 †	5,595,908	01-21-1997	Fawcett et al.	
	A65 †	5,601,982	02-11-1997	Sargent et al.	
	A66 †	5,603,351	02-18-1997	Cherukuri et al.	
	A67 †	5,605,662	02-18-1997	Heller et al.	
	A68 †	5,620,850	04-15-1997	Bamdad et al.	
	A69 †	5,632,876	05-27-1997	Zanzucchi et al.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	4	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A70 †	5,632,957	05-27-1997	Heller et al.	
	A71 †	5,635,358	06-03-1997	Wilding et al.	
	A72 †	5,637,469	06-10-1997	Wilding et al.	
	A73 †	5,643,738	07-01-1997	Zanzucchi et al.	
	A74 †	5,653,939	08-05-1997	Hollis et al.	
	A75 †	5,657,208	08-12-1997	Noe et al.	
	A76 †	5,670,322	09-23-1997	Eggers et al.	
	A77 †	5,681,484	10-28-1997	Zanzucchi et al.	
	A78 †	5,694,932	12-09-1997	Michel	
	A79 †	5,700,667	12-23-1997	Marble et al.	
	A80 †	5,705,346	01-06-1998	Okamoto et al.	
	A81 †	5,705,348	01-06-1998	Meade et al.	
	A82 †	5,726,026	03-10-1998	Wilding et al.	
	A83 †	5,727,548	03-17-1998	Hill et al.	
	A84 †	5,728,352	03-17-1998	Ackley	
	A85 †	5,728,532	03-17-1998	Ackley et al.	
	A86 †	5,741,700	04-01-1998	Ershov et al.	
	A87 †	5,750,015	05-12-1998	Soane et al.	
	A88 †	5,755,942	05-26-1998	Zanzucchi et al.	
	A89 †	5,756,050	05-26-1998	Ershov et al.	
	A90 †	5,759,866	06-02-1998	Machida et al.	
	A91 †	5,770,029	06-23-1998	Nelson et al.	
	A92 †	5,770,369	06-23-1998	Meade et al.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	5	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A93 †	5,770,721	6-23-1998	Ershov et al.	
	A94 †	5,776,672	07-07-1998	Hashimoto et al.	
	A95 †	5,780,234	07-14-1998	Meade et al.	
	A96 †	5,785,789	07-28-1998	Gagnon et al.	
	A97 †	5,795,453	08-18-1998	Gilmartin	
	A98 †	5,824,473	10-20-1998	Meade et al.	
	A99 †	5,837,859	11-17-1998	Teoule et al.	
	A100 †	5,843,767	12-01-1998	Beattie	
	A101 †	5,849,486	12-15-1998	Heller et al.	
	A102 †	5,851,772	12-15-1998	Mirzabekov et al.	
	A103 †	5,945,286	03-31-1999	Krihak et al.	
	A104 †	5,952,172	09-14-1999	Meade et al.	
	A105 †	5,968,745	10-19-1999	Thorp et al.	
	A106 †	6,013,170	01-11-2001	Meade	
	A107 †	6,013,459	01-11-2001	Meade	
	A108 †	6,020,047	02-01-2000	Everhart	
	A109 †	6,051,380	04-18-2000	Sosnowski et al.	
	A110 †	6,060,023	05-09-2000	Maracas	
	A111 †	6,060,327	05-09-2000	Keen	
	A112 †	6,063,573	05-16-2000	Kayyem	
	A113 †	6,071,699	06-06-2000	Meade et al.	
	A114 †	6,087,100	07-11-2000	Meade et al.	
	A115	6,090,933	07-18-2000	Kayyem et al.	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	6	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A116 †	6,096,273	11-01-2000	Kayyem et al.	
	A117 †	6,096,825	08-01-2000	Garnier et al.	
	A118 †	6,099,803	08-08-2000	Ackley et al.	
	A119 †	6,107,080	08-22-2000	Lennox	
	A120 †	6,177,250 B1	01-23-2001	Meade et al.	
	A121 †	6,180,352 B1	01-30-2001	Meade et al.	
	A122 †	6,200,761 B1	03-13-2001	Meade et al.	
	A123 †	6,203,758 B1	03-20-2001	Marks et al.	
	A124 †	6,221,583 B1	04-24-2001	Kayyem et al.	
	A125 †	6,232,062 B1	05-15-2001	Kayyem et al.	
	A126 †	6,238,624 B1	05-29-2001	Heller et al.	
	A127 †	6,238,870 B1	05-29-2001	Meade et al.	
	A128 †	6,248,229 B1	06-19-2001	Meade	
	A129 †	6,258,545 B1	07-10-2001	Meade et al.	
	A130 †	6,264,825 B1	07-24-2001	Blackburn et al.	
	A131	6,277,576 B1	08-21-2001	Meade et al.	
	A132	6,286,149 B1	07-31-2001	Meade et al.	
	A133 †	6,290,839 B1	09-18-2001	Kayyem et al.	
	A134 †	6,322,979 B1	11-27-2001	Bamdad et al.	
	A135 †	6,391,558 B1	05-21-2002	Henkens et al.	
	A136 †	6,416,642 B1	07-22-2002	Alajoki et al.	
	A137 †	6,461,820 B1	10-08-2002	Barton et al.	
	A138 †	6,478,939 B1	11-12-2002	Lennox et al.	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	7	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A139 †	6,479,240 B1	11-12-2002	Kayyem et al.	
	A140 †	6,495,323 B1	12-17-2002	Kayyem et al.	
	A141 †	6,528,266 B2	03-04-2003	Meade et al.	
	A142 †	6,541,617 B1	04-01-2003	Bamdad et al.	
	A143 †	6,600,026 B1	07-29-2003	Yu	
	A144	6,600,026 B1	07-29-2003	Kayyem et al.	
	A145 †	6,686,150 B2	02-03-2004	Blackburn et al.	
	A146	6,740,518 B1	05-24-2004	Duong et al.	
	A147	6,753,143 B2	06-22-2004	Tao et al.	
	A148	6,761,816 B1	07-13-2004	Blackburn et al.	
	A149	6,942,771 B1	09-13-2005	Kayyem	
	A150	6,977,151 B2	12-20-2005	Kayyem et al.	
	A151	2005-0211559 A1	09-29-2005	Kayyem	
	A152 †	2003-0170677 A1	09-11-2003	Meade et al.	
	A153 †	2003-0150723 A1	08-14-2003	Kayyem et al.	
	A154	2003-0150723 A1	08-14-2003	Kayyem et al.	
	A155 †	2004-0146909 A1	07-29-2004	Duong et al.	
	A156 †	2003-0143556 A1	07-31-2003	Kayyem et al.	
	A157 †	2004-0101890 A1	05-27-2004	Meade et al.	
	A158	2005-0053962 A1	03-10-2005	Irvine et al.	
	A159	2001-0034033 A1	10-25-2001	Meade et al.	
	A160	2002-0033345 A1	03-21-2002	Meade	
	A161 †	2002-0009810 A1	01-24-2002	O'Connor et al.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	8	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A162	2002-0006643 A1	01-17-2002	Blackburn et al.	
	A163 †	2003-0003473 A1	01-02-2003	Kayyem et al.	
	A164	2005-0003398 A1	01-06-2005	Tao et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>2</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
	B1 †	CA 2,090,904	09-24-1993	Hoffman La Roche		
	B2 †	EP 0 063 879 A1	11-03-1982	Yale University		
	B3 †	EP 0 142 301 A1	05-22-1985	Serono Diagnostics Ltd.		
	B4 †	EP 0 213 825 A2	03-11-1987	Molecular Devices Corp		
	B5 †	EP 0 229 442 A2	07-22-1987	Gen-Probe Inc.		
	B6 †	EP 0 229 943 B1	07-29-1987	Molecular Biosystems, Inc.		
	B7 †	EP 0 234 938 A2	02-09-1987	Cranfield Institute of Technology		
	B8 †	EP 0 515 615 A1	09-04-1996	Boehringer Mannheim		
	B9 †	EP 0 599 337 A2	01-16-1994	Canon KK		
	B10 †	EP 0 637 996 B2	07-23-1997	The Trustees of the University of Pennsylvania		
	B11 †	EP 0 637 998 B2	07-31-1996	The Trustees of the University of Pennsylvania		
	B12 †	EP 1 254 372 B1	11-06-2002	Clinical Micro Sensors, Inc.		
	B13 †	JP 6-041183	02-15-1994	Mitsubishi Chemical Ind.		
	B14 †	WO 86/05815 A1	10-09-1986	Genetics International, Inc.		
	B15 †	WO 90/05732 A1	05-31-1990	The Trustees of Columbia University of the City of New York		
	B16 †	WO 92/10757 A1	06-25-1992	Boehringer Mannheim		
	B17 †	WO 93/10267 A1	05-27-1993	Igen, Inc.		

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	9	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>2</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
	B18 †	WO 93/22053 A1	11-11-1993	The Trustees of the University of Pennsylvania		
	B19 †	WO 93/22678 A2/A3	1101101883	Massachusetts Institute of Technology		
	B20 †	WO 93/23425 A1	11-25-1993	The Ontario Cancer Institute		
	B21 †	WO 94/22889 A1	10-13-1994	Cis Bio International		
	B22 †	WO 95/11755 A1	05-04-1995	The Research Foundation of State University of New York		
	B23 †	WO 95/15971 A1	06-15-1995	California Institute of Technology		
	B24 †	WO 95/15971 A2/A3	06-15-1995	California Institute of Technology		
	B25 †	WO 96/10178 A1	04-04-1996	Pharmacia Biosensor AB		
	B26 †	WO 96/15576 A1	05-23-1996	David Samoff Research Center		
	B27 †	WO 96/39252 A1	12-12-1996	David Samoff Research Center		
	B28 †	WO 96/40712 A1	12-19-1996	California Institute of Technology		
	B29 †	WO 97/01646 A1	01-16-1997	University of North Carolina		
	B30 †	WO 97/12030 A1	04-03-1997	Nanogen, Inc.		
	B31 †	WO 97/27324 A1	07-31-1997	David Samoff Research Center		
	B32 †	WO 97/27329 A1	07-31-1997	The University of Chicago		
	B33 †	WO 97/31256 A1	08-28-1997	Cornell Research Foundation		
	B34 †	WO 97/36681 A1	10-09-1997	Perkin Elmer Corp.		
	B35 †	WO 97/41425 A1	11-06-1997	Pence, Inc.		
	B36 †	WO 97/44651 A1	11-27-1997	Australian Membrane and Biotechnology Institute		
	B37 †	WO 98/01758 A1	01-15-1998	Nanogen, Inc.		
	B38 †	WO 98/04740 A1	02-05-1998	Northwestern University		
	B39 †	WO 98/05424 A1	02-12-1998	Caliper Technologies Corp.		
	B40 †	WO 98/20162 A2/A3	05-14-1998	Clinical Micro Sensors, Inc.		

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	10	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>2</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
	B41 †	WO 98/27229 A1	06-25-1998	The University of Chicago		
	B42 †	WO 98/28444 A2/A3	07-02-1998	The University of Chicago		
	B43 †	WO 98/35232 A2/A3	08-13-1998	University of North Carolina at Chapel Hill		
	B44 †	WO 98/51823 A1	11-19-1998	Mosaic Technologies LLC		
	B45 †	WO 98/57159 A1	12-17-1998	Clinical Micro Sensors, Inc.		
	B46 †	WO 98/57319 A1	12-17-1998	Clinical Micro Sensors, Inc.		
	B47 †	WO 99/14596 A1	03-25-1999	AB Sangtec Medical		
	B48 †	WO 99/29711 A1	06-17-1999	Nanogen Inc.		
	B49 †	WO 99/37819 A2/A3	07-08-1999	Clinical Micro Sensors, Inc.		
	B50 †	WO 99/67425 A2/A3	12-29-1999	Clinical Micro Sensors, Inc.		
	B51 †	WO 00/16089 A2/A3	03-23-2000	Clinical Micro Sensors, Inc.		
	B52 †	WO 00/24941 A1	05-04-2000	Clinical Micro Sensors, Inc.		
	B53 †	WO 00/38836 A1	07-06-2000	Clinical Micro Sensors, Inc.		
	B54 †	WO 00/62931 A1	10-26-2000	Clinical Micro Sensors, Inc.		
	B55 †	WO 01/35100 A2/A3	05-17-2001	Clinical Micro Sensors, Inc.		

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.	T <sup>6</sup>
	C1 †	AIZAWA, M., et al., "Integrated Molecular Systems for Biosensors," <i>Sensors and Actuators B</i> , B24 (Nos 1-3) part 1:1-5 (March 1995).	
	C2 †	ALBERS, W. M., et al., "Design of Novel Molecular Wires for Realizing Long-Distance Electron Transfer," <i>Bioelectrochemistry</i> , 42:25-33 (1997).	
	C3 †	ALBERTSSON, P. "Partition Studies on Nucleic Acids I. Influence of Electrolytes, Polymer Concentration and Nucleic Acid Conformation on the Partition in the Dextran-Polyethylene Glycol System," <i>Biochim. Biophys. Acta.</i> , 103:1-12 (1965).	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	11	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.		T <sup>6</sup>
	C4 †	ALLERMAN, K.S., et al., "Electrochemical Rectification at a Monolayer-Modified Electrode," <i>J. Phys. Chem.</i> 100:(42) 17050-17058 (1996).		
	C5 †	AMASINO, R. "Acceleration of Nucleic Acid Hybridization Rate by Polyethylene Glycol," <i>Analytical Biochemistry</i> , 152:304-307 (1986).		
	C6 †	ARKIN, M., et al., "Evidence for Photoelectron Transfer Through DNA Intercalation," <i>J. Inorganic Biochem.</i> Abstracts, 6th International Conference on Bioinorganic Chemistry, 51(1) & (2):526 (1993).		
	C7 †	BARISCI, et al., "Conducting Polymer Sensors," <i>TRIP</i> , 4(9):307-311 (1996).		
	C8 †	BAUM, R. M., "Views on Biological, Long-Range Electron Transfer Stir Debate," <i>C&amp;EN</i> , pp 20-23 (1993).		
	C9 †	BEATTIE, et al., "Flowthrough Genosensors: Designs and Applications," Publishing information not known.		
	C10 †	BECHTOLD, R., et al., "Ruthenium-Modified Horse Heart Cytochrome c: Effect of pH and Ligation on the Rate of Intramolecular Electron Transfer between Ruthenium(II) and Heme(III)," <i>J. Phys. Chem.</i> , 90(16):3800-3804 (1986).		
	C11 †	BIDAN, "Electroconducting conjugated polymers: new sensitive matrices to build up chemical or electrochemical sensors. A Review.," <i>Sensors and Actuators</i> , B6:45-56 (1992).		
	C12 †	Biotechnology and Genetics: Genetic Screening Integrated Circuit," <i>The Economist</i> (February 25-March 3, 1995).		
	C13 †	BLONDER et al., "Three-dimensional Redox-Active layered Composites of Au-Au, Ag-Ag and Au-Ag Colloids," <i>Chem. Commun.</i> 1393-1394 (1998).		
	C14 †	BOGUSLAVSKY, L. et al., "Applications of redox polymers in biosensors," <i>Solid State Ionics</i> , 60:189-197 (1993).		
	C15 †	BOON et al., "Mutation Detection by Electrocatalysis at DNA- Modified Electrodes," <i>Nature Biotechnology</i> , 18: 1096-1100 (October 2000).		
	C16 †	BOWLER, B. E., et al., "Long-Range Electron Transfer in Donor (Spacer) Acceptor Molecules and Proteins," <i>Progress in Inorganic Chemistry: Bioinorganic Chemistry</i> , 38:259-322 (1990).		
	C17 †	BRUN, A. M., et al., "Photochemistry of Intercalated Quaternary Diazaaromatic Salts," <i>J. Am. Chem. Soc.</i> , 113:8153-8159 (1991).		
	C18 †	BUMM, et al., "Are Single Molecular Wires Conducting?," <i>Science</i> 271:1705-1707 (1996).		
	C19 †	CANTOR, C.R. et al., "Report on the Sequencing by Hybridization Workshop," <i>Genomics</i> , 13:1378-1383 (1992).		
	C20 †	CARR, J.D., et al., "Novel Electrochemical Sensors for neutral Molecules," <i>Chem. Commun.</i> , 1649-1550 (1997).		

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and-or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	12	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.		T <sup>6</sup>
	C21 †	CARTER, et al., "Voltammetric Studies of the Interaction of Metal chelates with DNA. 2. Tris- Chelated Complexes of Cobalt (III) and Iron (II) with 10-Phenanthroline and 2,3'-Bipyridine," <i>J. Am. Chem. Soc.</i> , 11"8901-8911 (1989).		
	C22 †	CARUANA, et al., "Enzyme-Amplified Amperometric Detection of Hybridization and of a Single Base Pair Mutation in an 18-Base Oligonucleotide on a 7-µm-Diameter Microelectrode," <i>J. Am. Chem. Soc.</i> , 121:769-774 (1999).		
	C23 †	CHANG, I-J., et al., "High-Driving-Force Electron Transfer in Metalloproteins: Intramolecular Oxidation of Ferrocycytochrome c by Ru(2,2'-bpy) <sub>2</sub> (im)(His-33) <sup>3+</sup> ," <i>J. Am. Chem. Soc.</i> , 113:7056-7057 (1991).		
	C24 †	Chidsey, C., et al., "Free Energy and Temperature Dependence of Electron Transfer at the Metal Electrolyte Interface," <i>Science</i> , 251:919-923 (1991).		
	C25 †	CHIDSEY, C., et al., "Coadsorption of Ferrocene-Terminated and Unsubstituted Alkanethiols on Gold" Electroactive Self-Assembled Monolayers," <i>J. Am. Chem. Soc.</i> , 112:4301-4306 (1990).		
	C26 †	CHRISEY, et al., "Covalent attachment of synthetic DNA to self-assembled monolayer films," <i>Nucleic Acids Research</i> , 24(15):3031-3039 (1996).		
	C27 †	CLERY, "DNA Goes Electric," <i>Science</i> , 267:1270 (1995).		
	C28 †	Commerce Business Daily Issue of September 26, 1996 PSA#1688.		
	C29 †	DAVIS, L. M., et al., "Electron Donor Properties of the Antitumour Drug Amsacrine as Studied by Fluorescence Quenching of DNA-Bound Ethidium," <i>Chem.-Biol. Interactions</i> , 62:45-58 (1987).		
	C30 †	DAVIS, L. M., et al., "Elements of biosensor construction," <i>Enzyme Microb. Technol.</i> 17:1030-1035 (1995).		
	C31 †	DEGANI et al., "Direct Electrical Communication between Chemically Modified Enzymes and Metal Electrodes. 2. Methods for Bonding Electron-Transfer Relays to Glucose Oxidase and D-Amino-Acid Oxidase," <i>J. Am. Chem. Soc.</i> 110:2615-2620 (1988).		
	C32 †	DEGANI, Y., et al., "Direct Electrical Communication between Chemically Modified Enzymes and Metal Electrodes. 1. Electron Transfer from Glucose Oxidase to Metal Electrodes via Electron Relays, Bound Covalently to the Enzyme," <i>J. Phys. Chem.</i> , 91(6):1285-1288 (1987).		
	C33 †	DEGANI, Y., et al., "Electrical Communication between Redox Centers of Glucose Oxidase and Electrodes via Electrostatically and Covalently Bound Redox Polymers," <i>J. Am. Chem. Soc.</i> , 111:2357-2358 (1989).		
	C34 †	DEINHAMMER, R.S., et al., "Electrochemical Oxidation of Amine-containing compounds: A Route to the Surface Modification of glassy carbon electrodes," <i>Langmuir</i> , 10:1306-1313 (1994).		
	C35 †	DOKTYCZ, C., et al., "Genosensors and Model Hybridization Studies," <i>Automation Technologies for Genome Characterization</i> , ed. Tony J. Beugelskijk, chapter 10, 205-225 (1997).		

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and-or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	13	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.			T <sup>6</sup>
	C36 †	DONG, S., "Self-assembled monolayers of thiols on gold electrodes for bioelectrochemistry and biosensors," <i>Bioelectrochem. Bioenerg.</i> 42(1):7-13 (1997).			
	C37 †	DORON, A., et al., "An Electroactive Photoisomerizable Monolayer-Electrode: A Command Surface for the Amperometric Transduction of Recorded Optical Signals," <i>Angew. Chem. Int. Ed. Engl.</i> 35(13&14):1535-1538 (Jul. 1996).			
	C38 †	DREYER, G. B., et al., "Sequence-specific cleavage of single-stranded DNA: Oligodeoxynucleotide-EDTA-Fe(II)," <i>Proc. Natl. Acad. Sci. USA</i> , 82:968-972 (1985).			
	C39 †	DROBYSHEV, A. et al., "Sequence Analysis by Hybridization with Oligonucleotide Microchip: Identification of $\beta$ -thalassemia Mutations," <i>Gene</i> , 188:45-52 (1997).			
	C40 †	DUBILEY, S. et al., "Fractionation, phosphorylation and Ligation on Oligonucleotide Microchips to Enhance Sequencing by Hybridization," <i>Nucleic Acids Research</i> , 25(12):2259-2265 (1997).			
	C41 †	DURHAM, B., et al., "Electron-Transfer Kinetics of Singly Labeled Ruthenium(II) Polypyridine Cytochrome c Derivatives," <i>American Chemical Society</i> , pages 181-193 (1990).			
	C42 †	DURHAM, B., et al., "Photoinduced Electron-Transfer Kinetics of Singly Labeled Ruthenium Bis(bipyridin) Dicarboxybipyridine Cytochrome c Derivatives," <i>Biochemistry</i> , 28:8659-8665 (1989).			
	C43 †	EGGERS, et al., "Genosensors: Microfabricated Devices for Automated DNA Sequence Analysis," <i>Advances in DNA Sequencing Technology</i> , 1891:113-126 (1993).			
	C44 †	ELGHANIAN et al., "Selective Colorimetric Detection of Polynucleotides Based on the Distance-Dependent Optical Properties of Gold Nanoparticles," <i>Science</i> , 277:1078-1081 (1997).			
	C45 †	ELIAS, H., et al., "Electron-Transfer Kinetics of Zn-Substituted Cytochrome c and Its Ru(NH <sub>3</sub> ) <sub>5</sub> (Histidine-33) Derivative," <i>J. Am. Chem. Soc.</i> , 110:429-434 (1988).			
	C46 †	FARVER, O., et al., "Long-range intramolecular electron transfer in azurins," <i>Proc. Natl. Acad. Sci. USA</i> , 86:6968-6972 (1989).			
	C47 †	FINKLEA, H. "Electrochemistry of Organized Monolayers of Thiols and Related Molecules of Electrodes," <i>Electroanalytical Chemistry: A Series of Advances</i> , Vol. 20. Dekker, NY. 1966.			
	C48 †	FOTIN, A. et al., "Parallel Thermodynamic Analysis of Duplexes on Oligodeoxyribonucleotide Microchips," <i>Nucleic Acids Research</i> , 216(6):1515-1521 (1998).			
	C49 †	FOX, L. S., et al., "Gaussian Free-Energy Dependence of Electron-Transfer Rates in Iridium Complexes," <i>Science</i> , 247:1069-1071 (1990).			
	C50 †	FOX, M. A., et al., "Light-Harvesting Polymer Systems," <i>C&amp;EN</i> , pages 38-48 (March 15, 1993).			

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and-or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	14	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.	† <sup>6</sup>	
	C51 †	FRANCOIS, J.-C., et al., "Periodic Cleavage of Poly(dA) by Oligothymidylates Covalently Linked to the 1,10-Phenanthroline-Copper Complex," <i>Biochemistry</i> , 27:2272-2276 (1988).		
	C52 †	FRIEDMAN, A. E., et al., "Molecular 'Light Switch' for DNA: Ru(bpy) <sub>2</sub> (dppz) <sup>2+</sup> ," <i>J. Am. Chem. Soc.</i> , 112:4960-4962 (1990).		
	C53 †	FROMHERZ, P., et al., "Photoinduced Electron Transfer in DNA Matrix from Intercalated Ethidium to Condensed Methylviologen," <i>J. Am. Chem. Soc.</i> , 108:5361-5362 (1986).		
	C54 †	GAO et al., "Self assembled conducting polymer monolayers of poly(3-octylthiophene) on gold electrodes," <i>Synthetic Metals</i> , 75:5-10 (1995).		
	C55 †	GARDNER, et al., "Application of conducting polymer technology in microsystems," <i>Sensors and Actuators</i> , A51:57-66 (1995).		
	C56 †	GINEITIS, et al., "Dissociation and Isolation of Chromatin Proteins in Salt Solutions by an Aqueous Two-Phase System," <i>Analytical Biochemistry</i> , 139:400-403 (1984).		
	C57 †	GINGERAS, et al., "Hybridization Properties of Immobilized Nucleic Acids," <i>Nucleic Acids Research</i> , 15(13):5373-5390 (1987).		
	C58 †	GREGG, B. A., et al., "Cross-linked redox gels containing glucose oxidase for amperometric biosensor applications," <i>Anal. Chem.</i> , 62:258-263 (1990).		
	C59 †	GREGG, B. A., et al., "Redox Polymer Films Containing Enzymes. 1. A Redox-Conducting Epoxy Cement: Synthesis, Characterization, and Electrocatalytic Oxidation of Hydroquinone," <i>J. Phys. Chem.</i> , 95:5970-5975 (1991).		
	C60 †	GUSCHIN, D. et al., "Manual Manufacturing of Oligonucleotide, DNA, and Protein Microchips," <i>Analytical Biochemistry</i> , 250:203-211 (1997).		
	C61 †	GUSCHIN, D. et al., "Oligonucleotide Microchips as Genosensors for Determinative and Environmental Studies in Microbiology," 63(6):2397-2402 (1997).		
	C62 †	HASHIMOTO, et al., "Sequence-Specific Gene Detection with a Gold Electrode Modified with DNA Probes and an Electrochemically Active Dye," <i>Anal. Chem.</i> 66:3830-3833 (1994).		
	C63 †	HEGNER, et al., "Immobilizing DNA on gold via thiol modification for atomic force microscopy imaging in buffer solutions," <i>FEBS</i> 336(3):452-456 (1993).		
	C64 †	HELLER, A., et al., "Fluorescent Energy Transfer Oligonucleotide Probes," <i>Fed. Proc.</i> 46(6):1968 (1987) Abstract No. 248.		
	C65 †	HELLER, A., "Electrical Wiring of Redox Enzymes," <i>Acc. Chem. Res.</i> , 23:128-134 (1990).		

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and-or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	15	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
	C66 †	HELLER, A., et al., "Amperometric biosensors based on three-dimensional hydrogel-forming epoxy networks," <i>Sensors and Actuators</i> , 13-14:180-183 (1993).	
	C67 †	HERNE, T., et al., "Characterization of DNA Probes Immobilized on Gold Surfaces," <i>J. Am. Chem. Soc.</i> , 119:8916-8920 (1997).	
	C68 †	HESS et al., "Base Pairing Properties of Novel Transition Metal PNA Conjugates," <i>J. Inorg. Biochem.</i> 74:161 (1999).	
	C69 †	HO, D., "DNA-Mediated Electron Transfer and Application to 'Biochip' Development," <i>Abstract. Office of Naval Research</i> (Report Date: July 25, 1991) 1-4, RR04106.	
	C70 †	HOBBS et al., "Polynucleotides Containing 2'-Amino-2'-deoxyribose and 2'-Azido-2'-deoxyribose," <i>Biochemistry</i> , 12(25):5138-5145 (1973).	
	C71 †	HSUNG, et al., "Synthesis and Characterization of Unsymmetric Ferrocene-Terminated Phenylethynyl Oligomers," <i>Organometallics</i> , 14:4808-4815 (1995).	
	C72 †	HSUNG, et al., "Thiophenol Protecting Groups for the Palladium-Catalyzed Heck Reaction: Efficient Syntheses of Conjugated Arylthiols," <i>Tetrahedron Letters</i> . 36(26):4525-4528 (1995).	
	C73 †	JENKINS et al., "A Sequence-Specific Molecular Light Switch: Tebhering of an Oligonucleotide to a Dipyrrophenazine Complex of Ruthenium (II), <i>J. Am. Chem. Soc.</i> , 114:8736-8738 (1992).	
	C74 †	JOHNSTON, D.H., et al., "Trans-Dioxorhenium (V)- Mediated Electrocatalytic Oxidation of DNA at Indium Tin-Oxide Electrodes: Voltammetric Detection of DNA Cleavage in Solution," <i>Inorg. Chem.</i> 33:6388-6390 (1994).	
	C75 †	KAMAT et al., <i>J. Phys. chem.</i> , 93(4):1405-1409 (1989). Abstract	
	C76 †	KATRITZKY, et al., "Pyridylethylation - A New Protection Method for Active Hydrogen Compounds," <i>Tetrahedron Letters</i> , 25(12):1223-1226 (1984).	
	C77 †	KELLEY, S.O. and J.K. Barton, "Electrochemistry of Methylene Blue Bound to a DNA-Modified Electrode," <i>Bioconjugate Chem.</i> , 8:31-37 (1997).	
	C78 †	KELLEY, S.O., et al., "Photoinduced Electron Transfer in Ethidium-Modified DNA Duplexes: Dependence on Distance and Base Stacking," <i>J. Am. Chem. Soc.</i> 119(41):9861-9870 (Oct. 1997).	
	C79 †	KOHNE, et al., "Room Temperature Method for Increasing the Rate of DNS Reassociation by Many Thousandfold: The Phenol Emulsion Reassociation Technique," <i>Biochemistry</i> , 16(24):5329-5341 (1977).	
	C80 †	KOJIMA et al., "A DNA Probe of Ruthenium Bipyridine Complex Using Photocatalytic Activity," <i>Chemistry Letter</i> , pp 1889-1982 (1989).	
	C81 †	KOLB, J., et al., "Small-scale acoustic streaming in liquids," <i>J. Acoustics Soc. Am.</i> 28(6):1237-1242 (1956).	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	16	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.	T <sup>6</sup>
	C82 †	KORRI-YOISSOUFI, H., et al., "Toward Bioelectronics: Specific DNA Recognition Based on an Oligonucleotide-Functionalized Polypyrrole," <i>J. Am. Chem.</i> 119:(31) 7388-7389 (1997).	
	C83 †	KRETSCHMANN, E., et al., "Radioactive decay of non radiative surface plasmons excited by light," <i>Z. Naturforsch.</i> 23A:2135-2136 (1968).	
	C84 †	LAVIRON, E., "A.C. Polarography and Faradaic Impedance of Strongly Adsorbed Electroactive Species. Part I: Theoretical and Experimental Study of a Quasi-Reversible Reaction in the Case of a Langmuir Isotherm," <i>J. Electroanal. Chem.</i> , 97:135-149 (1979).	
	C85 †	LAVIRON, E., "A.C. Polarography and Faradaic Impedance of Strongly Adsorbed Electroactive Species. Part III: Theoretical Complex Plane Analysis for a Surface Redox Reaction," <i>J. Electroanal. Chem.</i> , 105:35-42 (1979).	
	C86 †	LEE, et al., "Direct Measurement of the Forces Between Complementary Strands of DNA," <i>Science</i> , 266:771-773 (1994).	
	C87 †	LENHARD, J.R., et al., "Part VII Covalent Bonding of a Reversible- Electrode Reactant to Pt Electrodes Using an organosilane Reagent" <i>J. Electroanal. Chem.</i> , 78:195-201 (1977).	
	C88 †	LINCOLN, P., et al., "Short-Circuiting the Molecular Wire: Cooperative Binding of $\Delta$ -[Rh(phen) <sub>2</sub> dppz] <sup>2+</sup> and $\Delta$ -[Rh(phi) <sub>2</sub> dppz] <sup>3+</sup> to DNA," <i>J. Am. Chem. Soc.</i> , 119:1454-1455 (1997).	
	C89 †	LIPKIN "Identifying DNA by the Speed of Electrons," <i>Science News</i> , 147(8):117 ( 1995).	
	C90 †	LIVSHITS, M. et al., "Theoretical Analysis of the Kinetics of DNA Hybridization with Gel-Immobilized Oligonucleotides," <i>Biophysical Journal</i> , 71:2795-2801 (1996).	
	C91 †	MALDONADO-RODRIGUEZ, et al., "Mutation Detection by Stacking Hybridization on Genosensor Arrays," <i>Molecular Biotechnology</i> , 11:13-25 (1999).	
	C92 †	MASKOS, U., et al., "Oligonucleotide hybridisations on glass supports: a novel linker for oligonucleotide synthesis and hybridisation properties of oligonucleotides synthesised <i>in situ</i> ," <i>Nucleic Acids Research</i> , 20(7):1679-1684 (1992).	
	C93 †	MAZZOCCHI, Ph.H. and G. Fritz, "Photolysis of N-(2-Methyl-2-Propenyl)phthalimide in Methanol. Evidence Supporting Radical-Radical Coupling of a Photochemically Generated Radical Ion Pair," <i>Journal of the American Chemical Society</i> , 108(18):5361-5362 (1986).	
	C94 †	McCORMICK, R., et al., "Microchannel electrophoretic separations for DNA in injection-molded plastic substrates," <i>Anal. Chem.</i> 69(14):2626-2630 (Jul. 1997):	
	C95 †	McGEE, et al., "2'-Amino-2'-deoxyuridine via an Intramolecular Cyclization of a Trichloroacetimidate," <i>J. Org. Chem.</i> , 61:781-785 (1996).	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	17	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.	T <sup>6</sup>
	C96 †	MEADE, T. J., "Driving-Force Effects on the Rate of Long-Range Electron Transfer in Ruthenium-Modified Cytochrome c," <i>J. Am. Chem. Soc.</i> , 111:4353-4356 (1989).	
	C97 †	MEADE, T., et al., "Electron Transfer through DNA: Site-Specific Modification of Duplex DNA with Ruthenium Donors and Acceptors," <i>Angew Chem. Int. Ed. Engl.</i> , 34:352 (1995).	
	C98 †	MESTEL, "Electron Highway Points to Identity of DNA," <i>New Scientist</i> , p. 21 (1995).	
	C99 †	MILLAN, et al., "Voltammetric DNA Biosensor for Cystic Fibrosis Based on a Modified Carbon Paste Electrode," <i>Anal. Chem.</i> , 66:2943-2948 (1994).	
	C100 †	MILLAN, K.M. and Mikkelsen, S.R., "Sequence-Selective Biosensor for DNA Based on Electroactive Hybridization Indicators," <i>Anal. Chem.</i> , 65:2317-2323 (1993).	
	C101 †	MILLAN, K.M., et al., "Covalent Immobilization of DNA onto Glassy Carbon Electrodes," <i>Electroanalysis</i> , 4:929-932 (1992).	
	C102 †	MILLER, C., "Absorbed $\omega$ -Hydroxy Thiol Monolayers on Gold Electrodes: Evidence for Electron Tunneling to Redox Species in Solution," <i>J. Phys. Chem.</i> , 95:877-886 (1991).	
	C103 †	MIRKIN et al., "A DNA-based Method for Rationally Assembling Nonoparticles into Macroscopic Materials," <i>Nature</i> , 382:607-609 (1996).	
	C104 †	MIRZABEKOV, A. et al., "Dna Sequencing by Hybridization - a Megasequencing Method and a Diagnostic Tool," <i>Tibtech</i> , 12:27-32 (1994).	
	C105 †	MITCHELL et al., "Programmed Assembly of DNA Functionalized Quantum Dots," <i>J. Am. Chem. Soc.</i> , 121:8122-8123 (1999).	
	C106 †	MUCIC et al., "DNA-Directed Synthesis of Binary Nanoparticle Network Materials," <i>J. Am. Chem. Soc.</i> , 120:12674-12675 (1998).	
	C107 †	MUCIC, R.C., et al., "Synthesis and Characterization of DNA with Ferrocenyl Groups Attached to Their 5'-Termini: Electrochemical Characterization of a Redox-Active nucleotide Monolayer," <i>Chem. Commun.</i> , 555-557 (1996).	
	C108 †	MÜLLER, et al., "DNA Fractionation by Two-Phase Partition with Aid of a Base-Specific Macroligand," <i>Analytical Biochemistry</i> , 118:269-277 (1981).	
	C109 †	MÜLLER, W. "Partitioning of Nucleic Acids," <i>Partitioning In Aqueous Two-Phase Systems</i> , 227-266 (1985).	
	C110 †	MURPHY, C. J., et al., "Long-Range Photoinduced Electron Transfer Through a DNA Helix," <i>Science</i> , 262:1025-1029 (1993).	
	C111 †	NAKASHIMA, N., et al., "An Ion Gate Lipid Monolayer Membrane on Gold Electrodes," <i>J. Chem. Soc. Chem. Commun.</i> 4:232-233 (1991).	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and-or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	18	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.	T <sup>6</sup>
	C112 †	NAPIER, M., et al., "Modification of Electrodes with Dicarboxylate Self-Assembled Monolayers for Attachment and Detection of Nucleic Acids," <i>Langmuir</i> 13(23):6342-6344 (Nov. 1997).	
	C113 †	NAPIER, M.E., et al., "Probing Bionolecule Recognition with Electron Transfers Electrochemical Sensors for DNA Hybridization," <i>Bioconjugate Chem</i> 8:905-913 (1997).	
	C114 †	NIWA, M., et al., "Specific binding of concanavalin a to glycolipid monolayers on gold electrodes," <i>J. Chem. Soc. Chem. Commun</i> 7:547-549 (1992).	
	C115 †	ORELLANA, G., et al., "Photoinduced Electron Transfer Quenching of Excited Ru(II) Polypyridyls Bound to DNA: The Role of the Nucleic Acid Double Helix," <i>Photochemistry and Photobiology</i> , 54(4):499-509 (1991).	
	C116 †	PALECEK, "From Polarography of DNA to Microanalysis with Nucleic Acid-Modified Electrodes," <i>Electroanalysis</i> . 8(1):7-14 (1996).	
	C117 †	PARINOV, S., "DNA Sequencing by Hybridization to Microchip octa- and Decanucleotides Extended by Stacked Pentanucleotides," <i>Nucleic Acids Research</i> , 24(15):2998-3004 (1996).	
	C118 †	PATERSON, "Electric Genes: Current Flow in DNA Could Lead to Faster Genetic Testing," <i>Scientific American</i> , 33-34 (May 1995).	
	C119 †	PONTIUS, et al., "Rapid Renaturation of Complementary DNA Strands Mediated by Cationic Detergents: A Role for High-Probability Binding Domains in Enhancing the Kinetics of Molecular Assembly Processes," <i>Proc. Natl. Acad. Sci. USA</i> , 88:8237-8241 (1991).	
	C120 †	PONTIUS, et al., "Renaturation of Complementary DNA Strands Mediated gby Purified Mammalian Heterogeneous Nuclear Ribonucleoprotein A1 Protein: Implications for a Mechanism for Rapid Molecular Assembly," <i>Proc. Natl. Acad. Sci. USA</i> , 87:8403-8407 (1990).	
	C121 †	PROUDNIKOV, D., "Immobilization of DNA in Polyacrylamide Gel for the manufacture of DNA and DNA-Oligonucleotide Microchips," <i>Analytical Biochemistry</i> , 259:34-41 (1998).	
	C122 †	PROUDNIKOV, D. et al., "Chemical Methods of DNA and RNA Fluorescent Labeling," <i>Nucleic Acids Research</i> , 24(22):4535-4542 (1996).	
	C123 †	PURUGGANAN, M. D., et al., "Accelerated Electron Transfer Between Metal Complexes Mediated by DNA," <i>Science</i> , 241:1645-1649 (1988).	
	C124 †	REIMERS, J., et al., "Towards Efficient Molecular Wires and Switches: The Brooker Ions," <i>BioSystems</i> 35:107-111 (1995).	
	C125 †	RHODES, D., et al., "Helical Periodicity of DNA Determined by Enzyme Digestion," <i>Nature</i> , 286:573-578 (1980).	
	C126 †	RISSER, S. M., et al., "Electron Transfer in DNA: Predictions of Exponential Growth and Decay of Coupling with Donor-Acceptor Distance," <i>J. Am. Chem. Soc.</i> , 115(6):2508-2510 (1993).	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	19	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.	T <sup>6</sup>	
	C127 †	ROJAS, M., et al., "Molecular recognition at the electrode-solution interface, design, self-assembly, and interfacial binding properties of a molecular sensor," <i>J. Am. Chem. Soc.</i> 117(21):5883-5884 (May 1995).		
	C128 †	SAKAMOTO, S., et al., "Design and synthesis of flavin-conjugated peptines and assembly on a gold electrode," <i>J. Chem. Soc. Perkin Transact.</i> 2 11:2319-2326 (1996).		
	C129 †	SATO, Y., et al., "Unidirectional Electron Transfer at Self-Assembled Monolayers of 11-Ferrocenyl-1-undecanethiol on Gold," <i>Bull. Chem. Soc. Jpn.</i> , 66(4):1032-1037 (1993).		
	C130 †	SATYANARAYANA, S., et al., "Neither Δ- nor Λ-Tris(phenanthroline)ruthenium(II) Binds to DNA by Classical Intercalation," <i>Biochemistry</i> , 31(39):9319-9324 (1992).		
	C131 †	SCHLERETH, D., et al., "Self-Assembled Monolayers with Biospecific Affinity for NAD (H)-Dependent Dehydrogenases: Characterization by Surface Plasmon Resonance Combined with Electrochemistry 'in situ'," <i>Journal of Electroanalytical Chemistry</i> , 444:231-240 (1998).		
	C132 †	SCHREIBER, et al., "Bis(purine) Complexes of <i>trans</i> -a <sub>2</sub> Pt <sup>II</sup> : Preparation and X-ray Structures of Bis(9-methyladenine) and Mixed 9-Methyladenine, 9-Methylguanine Complexes and Chemistry Relevant to Metal-Modified Nucleobase Triples and Quartets," <i>J. Am. Chem. Soc.</i> 118:4124-4132 (1996).		
	C133 †	SCHUHMANN, W., et al., "Electron Transfer between Glucose Oxidase and Electrodes via Redox Mediators Bound with Flexible Chains to the Enzyme Surface," <i>J. Am. Chem. Soc.</i> , 113:1394-1397 (1991).		
	C134 †	SCHUMM, et al., "Iterative Divergent-Convergent Approach to Linear Conjugated Oligomers by Successive Doubling of the Molecular Length: A Rapid Route to a 128 □-Long Potential Molecular Wire," <i>Angew. Chem. Int. Ed. Engl.</i> , 33(11):1360-1363 (1994).		
	C135 †	SIGEL, G.B., et al., "A Self-Assembled Monolayer for the Binding and Study of Histidine-Tagged Proteins by Surface Plasmon Resonance," <i>Analytical Chemistry</i> 68(3) 490-497 (1996).		
	C136 †	SLOOP, F., et al., "Metalloorganic labels for DNA sequencing and mapping," <i>New. J. Chem.</i> , 18: 317-326 (1994). (added 4-23-01).		
	C137 †	SOUTHERN, E.M., et al., "Arrays of Complementary Oligonucleotides for Analysing the Hybridisation Behavior of nucleic Acids," <i>Nucleic Acids Research</i> 22:(8) 1368-1373 (1994).		
	C138 †	STEEL, et al., "Electrochemical Quantitation of DNA Immobilized on Gold," <i>Anal. Chem.</i> , 70:4670-4677 (1998).		
	C139 †	STORHOFF et al., "One-Pot Colorimetric Differentiation of Polynucleotides with Single Base Imperfections Using Gold Nanoparticles Probes," <i>J. Am. Chem. Soc.</i> , 120:1959-1964 (1998).		
	C140 †	STROBEL, S., et al., "Site-Specific Cleavage of a Yeast Chromosome by Oligonucleotide-Directed Triple-Helix Formation," <i>Science</i> , 249:73-75 (1990).		
	C141 †	SU, et al., "Interfacial Nucleic Acid Hybridization Studied by Random Primer <sup>32</sup> P Labelling and Liquid-Phase Acoustic Network Analysis," <i>Analytical Chemistry</i> , 66(6):769-777 (1994).		
Examiner Signature				Date Considered

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and-or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	20	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.	T <sup>6</sup>	
	C142 †	TAKEDA, H., et al., "Preparation of 1-Alkynyl 2-(Trimethylsilyl)ethyl Sulfides as Thiolare Anion Precursors for Self-Assembled Monolayers," <i>Tetrahedron Letters</i> 39:3701-3704 (1998).		
	C143 †	TELSER, J., et al., "DNA Duplexes Covalently Labeled at Two Sites: Synthesis and Characterization by Steady-State and Time-Resolved Optical Spectroscopies," <i>J. Am. Chem. Soc.</i> , 111:7226-7232 (1989).		
	C144 †	TELSER, J., et al., "DNA Oligomers and Duplexes Containing a Covalently Attached Derivative of Tris(2,2'-bipyridine)ruthenium(II): Synthesis and Characterization by Thermodynamic and Optical Spectroscopic Measurements," <i>J. Am. Chem. Soc.</i> , 111:7221-7226 (1989).		
	C145 †	TERRETTAZ, S., et al., "Protein binding to supported lipid membranes: investigation of the cholera toxin-ganglioside interaction by simultaneous impedance spectroscopy and surface plasmon resonance," <i>Langmuir</i> 9(5):1361-1369 (May 1993).		
	C146 †	THARA, T., et al., "Gene Sensor using Ferrocenyl Oligonucleotide," <i>Chem. Commun.</i> , 1609-1610 (1997).		
	C147 †	TIMOFEEV, E. et al., "Methidium Intercalator Inserted into Synthetic Oligonucleotides," <i>Tetrahedron Letters</i> , 37(47):8467-8470 (1996).		
	C148 †	TIMOFEEV, E. et al., "Regioselective Immobilization of Short Oligonucleotides to Acrylic Copolymer Gel," <i>Nucleic Acids Research</i> , 24(16): 3142-3148 (1996).		
	C149 †	TOUR, "Conjugated Macromolecules of Precise Length and Constitution. Organic Synthesis for the Construction of Nanoarchitectures," <i>Chem. Rev.</i> , 96:537-553 (1996).		
	C150 †	TOUR, et al., "Self-Assembled Monolayers and Multilayers of Conjugated Thiols, $\alpha$ - $\omega$ -Dithiols, and Thioacetyl-Containing Adsorbates. Understanding Attachments between Potential Molecular Wires and Gold Surfaces," <i>J. Am. Chem. Soc.</i> , 117:9529-9534 (1995).		
	C151 †	TULLIUS, T., et al., "Iron(II) EDTA Used to Measure the Helical Twist Along Any DNA Molecule," <i>Science</i> , 230:679-681 (1985).		
	C152 †	TURRO, N., et al., "Molecular Recognition and Chemistry in Restricted Reaction Spaces. Photophysics and Photoinduced Electron Transfer on the Surfaces of Micelles, Dendrimers, and DNA," <i>Acc. Chem. Res.</i> , 24:332-340 (1991).		
	C153 †	TURRO, N., et al. "Photoelectron Transfer Between Molecules Adsorbed in Restricted Spaces," <i>Photochem. Convers. Storage Sol. Energy, Proc. Int. Conf.</i> , 8th, pp 121-139 (1990).		
	C154 †	UOSAKE, K., et al., "A Self-Assembled Monolayer of Ferrocenylalkane Thiols on Gold as an Electron Mediator for the Reduction of Fe(III)-EDTA in Solution," <i>Electrochimica Acta.</i> , 36(11-12):1799-1801 (1991).		
	C155 †	VAN NESS, J., et al., "A Versatile Solid Support System for Oligodeoxynucleotide Probe-Based Hybridization Assays," <i>Nucleic Acids Research</i> , 19(12):3345-3349 (1991).		

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and-or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A-PTO (Modified)  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/823,503	
			Filing Date	April 12, 2004	
			First Named Inventor	O'CONNOR, Stephen D.	
			Art Unit	1753	
			Examiner Name	NOGUEROLA, Alexander S.	
Sheet	21	of	21	Attorney Docket Number	A-66566-7 (463037-00323)

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.	T <sup>6</sup>
	C156 †	VELEV et al., "In Situ Assembly of Colloidal Particles into Miniaturized Biosensors," <i>The ACS Journal of Surfaces and Colloids</i> , Langmuir, 15(11):3693-3698 (1999).	
	C157 †	WALLACE, J., et al., "Electron Transfer of Yeast Cytochrome C Immobilized On Sam Modified Gold Electrodes", <i>Book of Abstracts, 214<sup>th</sup> ACS National Meeting</i> , Las Vegas, NV, PHYS-326 (September 7-11 1997).	
	C158 †	WANG, J., et al., "Peptide Nucleic Acid Probes for Sequence-Specific DNA Biosensors," <i>J. Am. Chem. Soc.</i> 118(33):7667-7670 (Aug. 1996).	
	C159 †	WATSON et al., "Hybrid Nanoparticles with Block Copolymer Shell Structures," <i>J. Am. Chem. Soc.</i> , 121:462-463 (1999).	
	C160 †	WEBER, et al., "Voltammetry of Redox-Active Groups Irreversibly Adsorbed onto Electrodes. Treatment Using the Marcus Relation between Rate and Overpotential," <i>Anal. Chem.</i> , 66:3164-3172 (1994).	
	C161 †	WETMUR, J. "Acceleration of DNA Renaturation Rates," <i>Biopolymers</i> , 14:2517-2524 (1975).	
	C162 †	WILLIAMS, et al., "Studies of oligonucleotide interactions by hybridisation to arrays: the influence of dangling ends on duplex yield," <i>Nucleic Acids Research</i> , 22(8):1365-1367 (1994).	
	C163 †	WINKLER, J., et al., "Electron Transfer in Ruthenium-Modified Proteins," <i>Chem. Rev.</i> , 92:369-379 (1992).	
	C164 †	XU, et al., "Immobilization and Hybridization of DNA on an Aluminum(III) Alkanebisphosphonate Thin Film with Electrogenerated Chemiluminescent Detection," <i>J. Am. Chem. Soc.</i> , 117:2627-2631 (1995).	
	C165 †	XU, et al., "Immobilization of DNA on an Aluminum(III) alkanebisphosphonate Thin Film with Electrogenerated Chemiluminescent Detection," <i>J. Am. Chem. Soc.</i> , 116:8386-8387 (1994).	
	C166 †	YANG, et al., "Growth and characterization of metal(ii) alkanebisphosphonate multilayer thin films on gold surfaces," <i>J. Am. Chem. Soc.</i> , 115:11855-11862 (1993).	
	C167 †	YERSHOV, G. et al., "DNA analysis and diagnostics on oligonucleotide microchips," <i>Proc. Natl. Acad. Sci. USA</i> 93:4913-4918 (1996).	
	C168 †	ZHOU, et al., "Fluorescent chemosensors based on energy migration in conjugated polymers: the molecular wire approach to increased sensitivity," <i>J. Am. Chem. Soc.</i> , 117:12593-12602 (1995).	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: † These references were previously cited in a related application relied upon for an earlier filing date under 35 USC 120 and no copies are submitted in accordance with 37 CFR 1.98(d). Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and-or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and selection option 2